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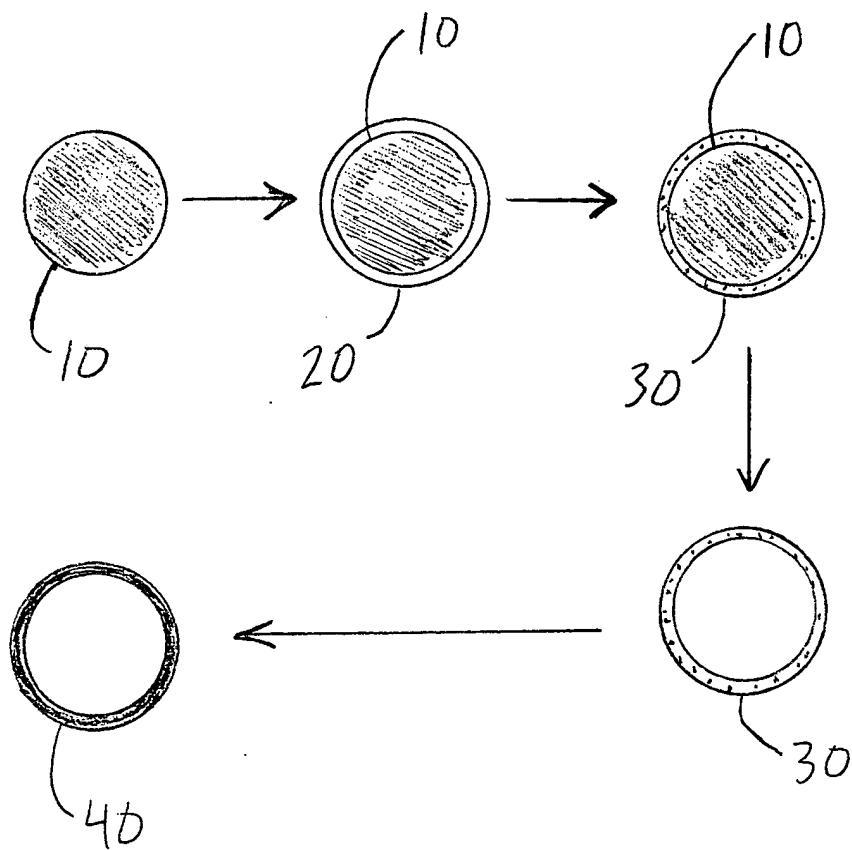


Fig. 1

Fig. 2

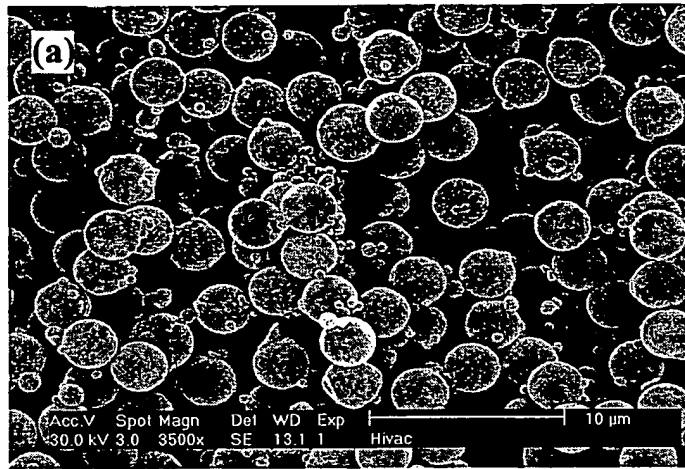


Fig. 3

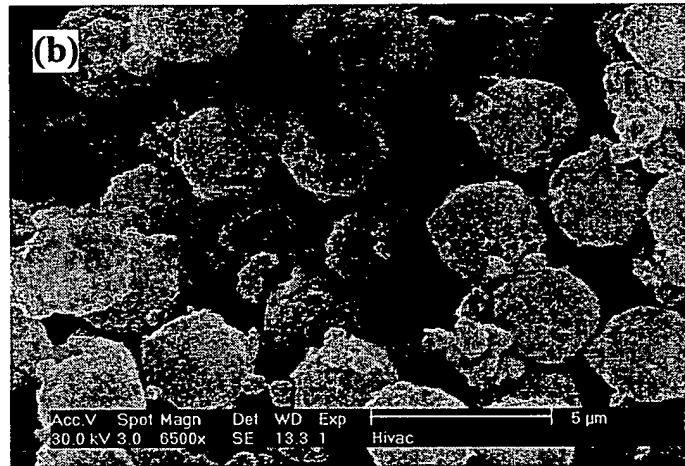


Fig. 4

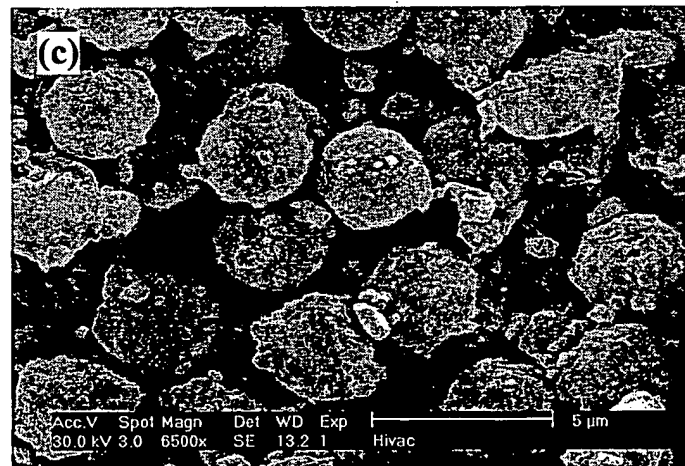


Fig. 5

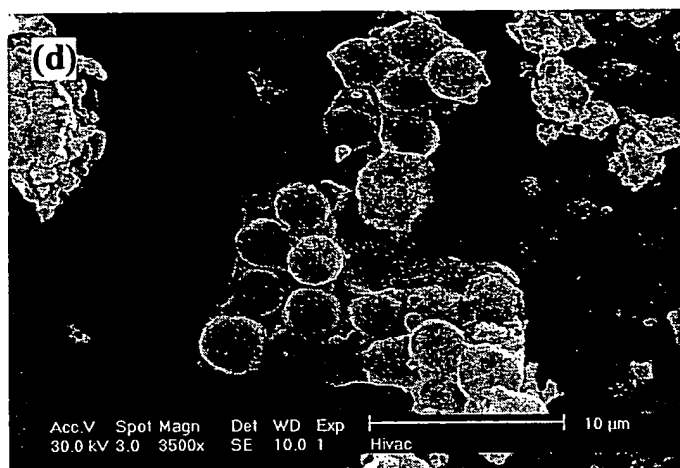
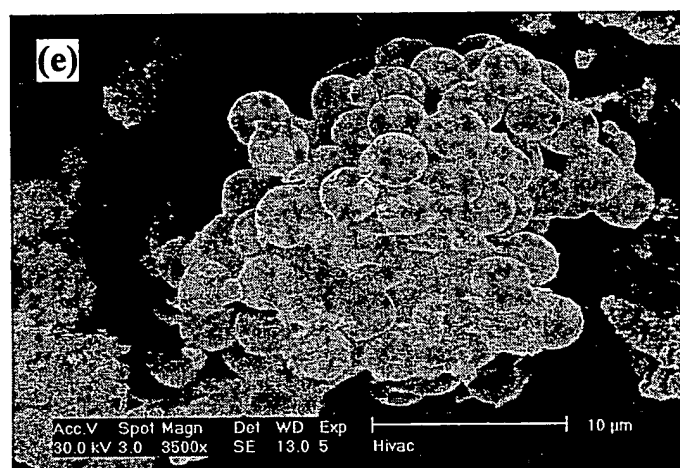


Fig. 6



Sequence	Surface Area (m <sup>2</sup> .g <sup>-1</sup> )	Pore Volume (mL.g <sup>-1</sup> )
untreated PS beads	1.47	0.01
alumoxane coated PS beads	182	0.22
A-alumoxane <sup>a</sup> after calcining to 220 °C	216	0.26
A-alumoxane calcined to 220 °C <sup>a</sup> after washing with toluene	146	0.25
after sintering to 1000 °C	142	0.55
A-alumoxane fired 1000 °C <sup>a</sup>	111	0.32

<sup>a</sup> Free-standing samples formed by evaporation of an aqueous solution of A-alumoxane onto a flat substrate. Used for comparative purposes.

Fig. 7

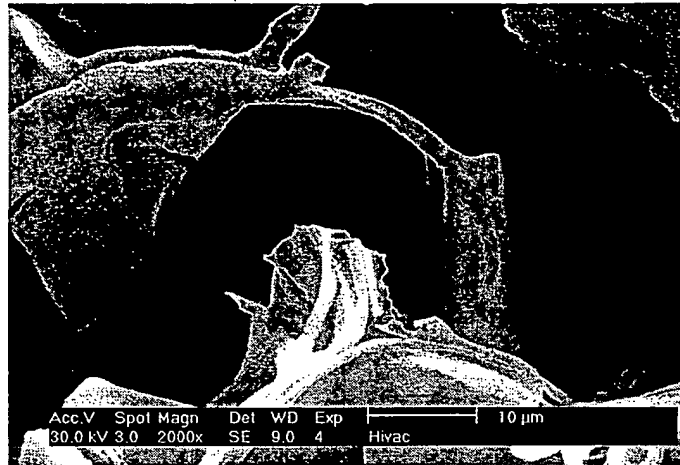


Fig. 8

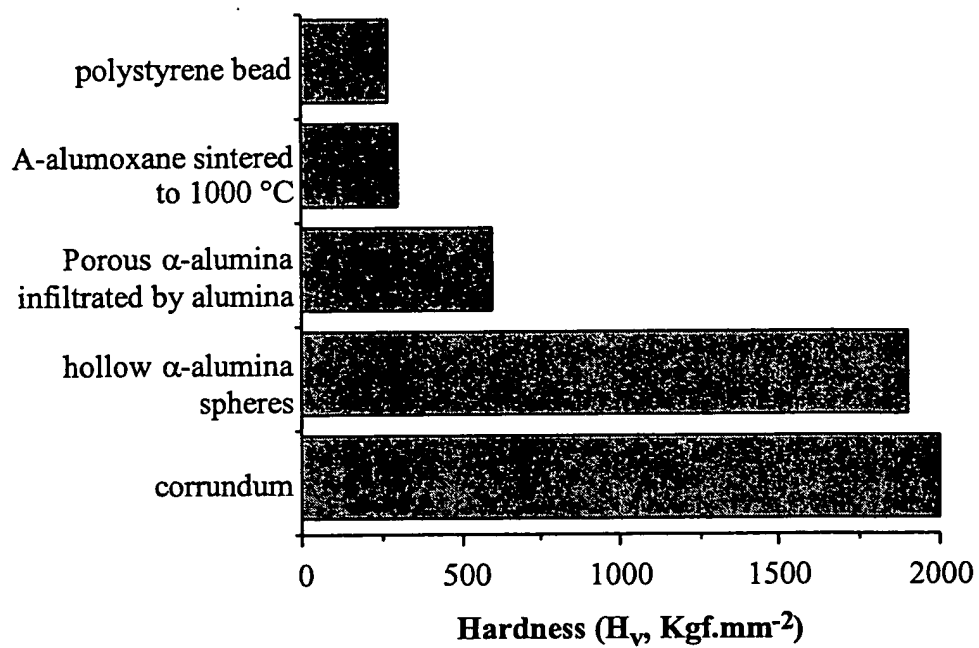


Fig. 9

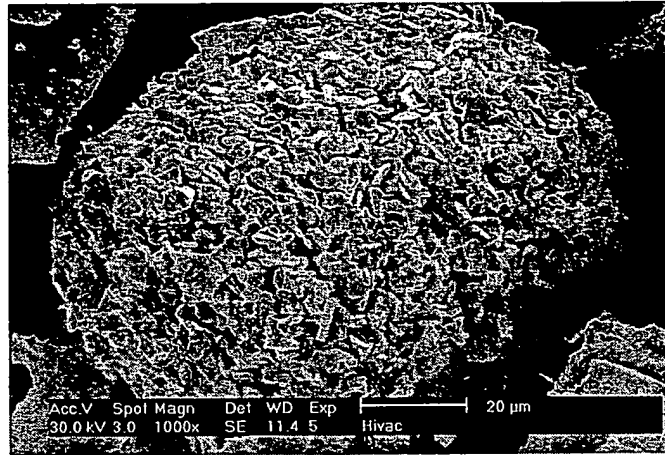


Fig. 10



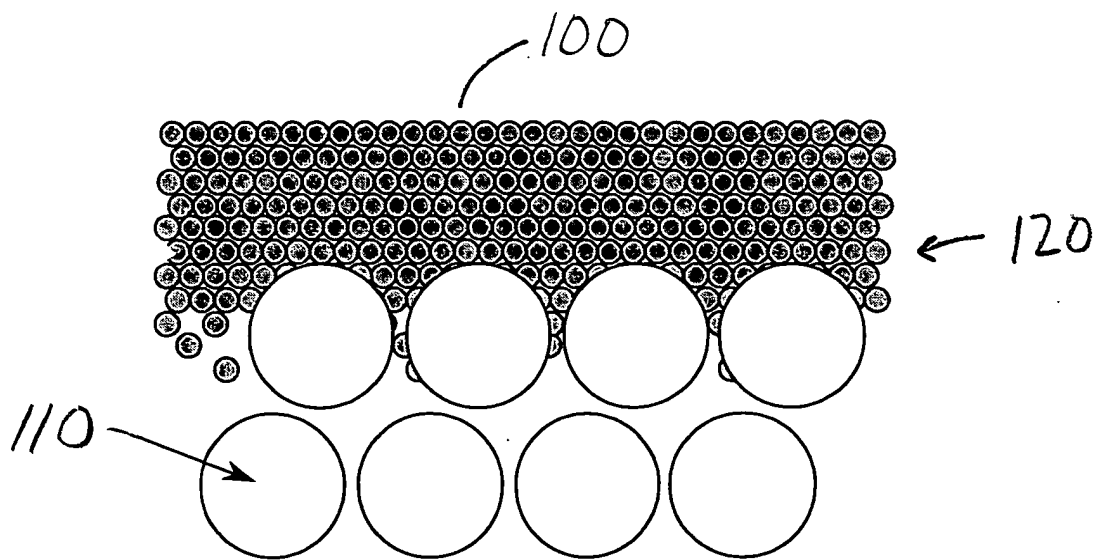


Fig. 11

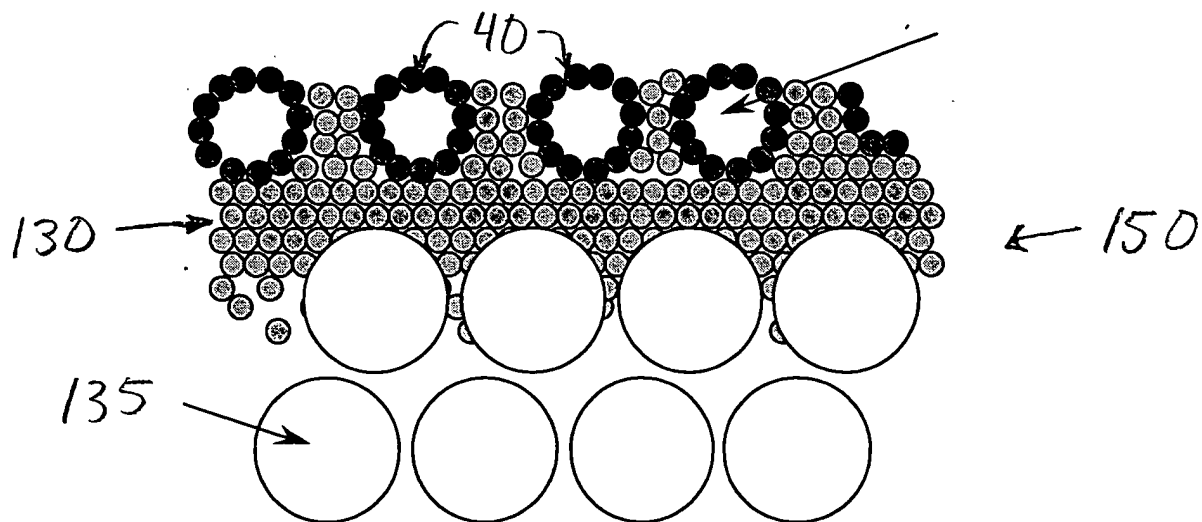


Fig. 12

	Alumina support	“Flat” alumina membrane	Membrane containing pre-formed $\alpha$ -alumina spheres		
wt% A-alumoxane used for spheres	n/a	n/a	2	5	8
Flow (mL.min <sup>-1</sup> )	0.12	0.71	0.108	0.065	0.06
Flux (10 <sup>-6</sup> m.s <sup>-1</sup> )	1.44	0.86	1.3	0.78	0.73
Permeability (nm <sup>2</sup> )	37.0	22.1	33.7	20.4	18.7
Pore volume (mL.g <sup>-1</sup> )		0.32	0.47	0.48	0.50
Surface area (m <sup>2</sup> .g <sup>-1</sup> )	3.5	111.0	245.5	224.8	254.24

Fig. 13

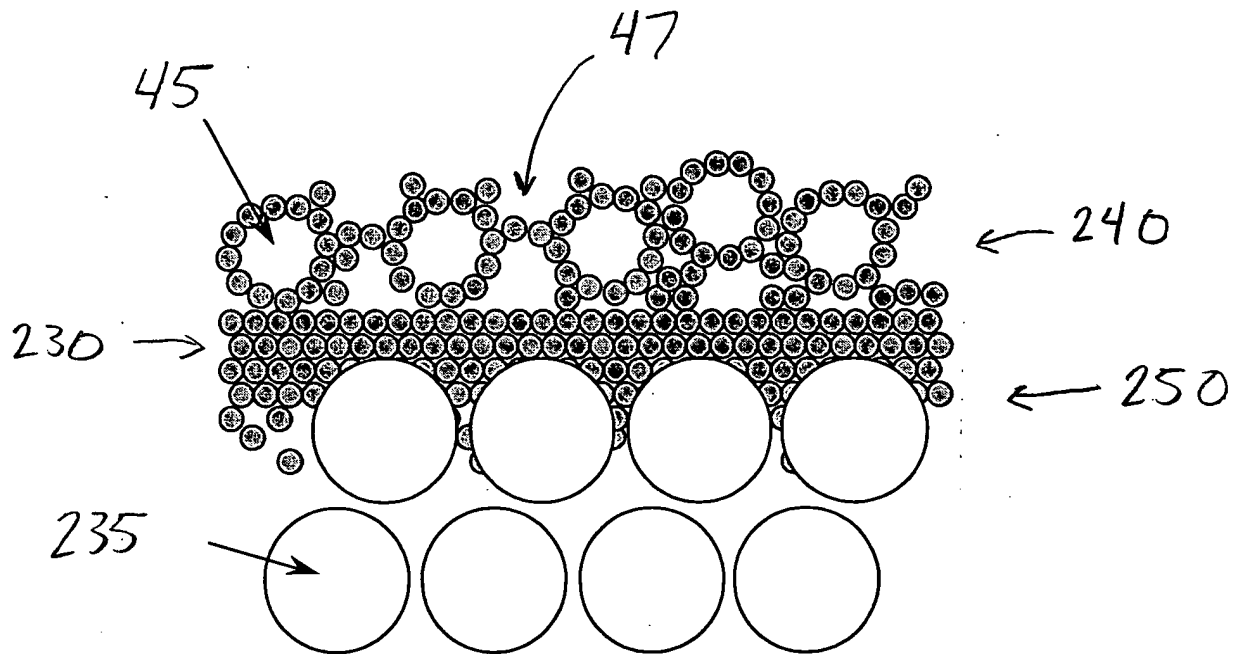


Fig. 14

Fig. 15

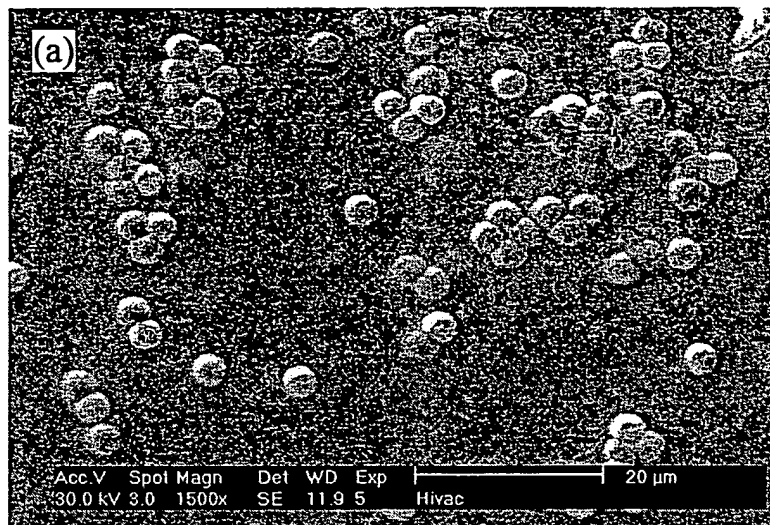
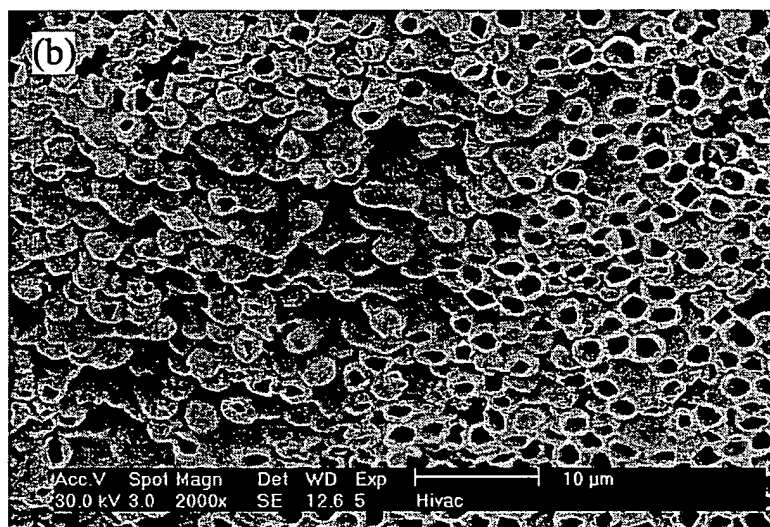


Fig. 16



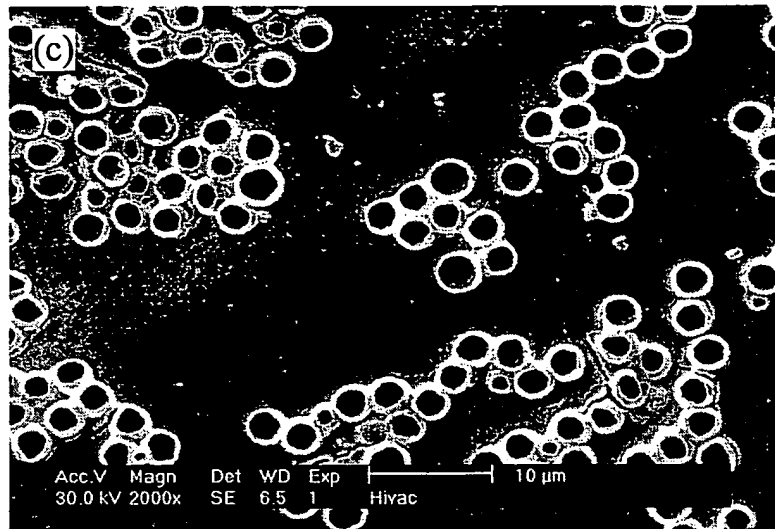


Fig. 17

Fig. 18

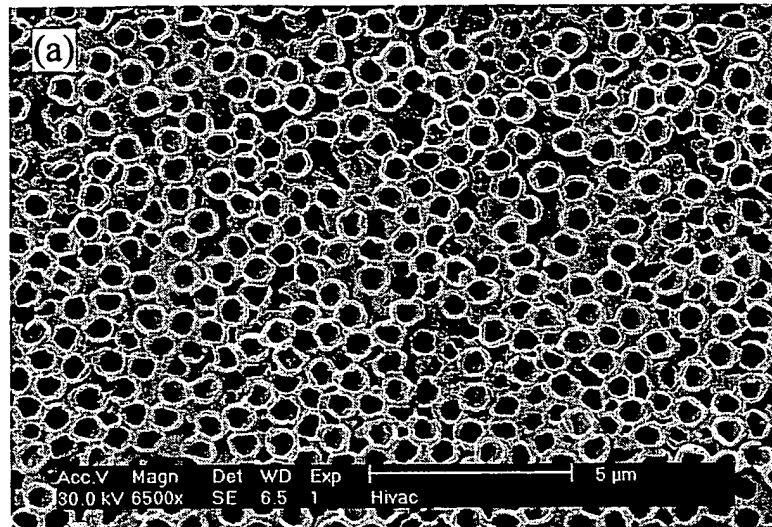
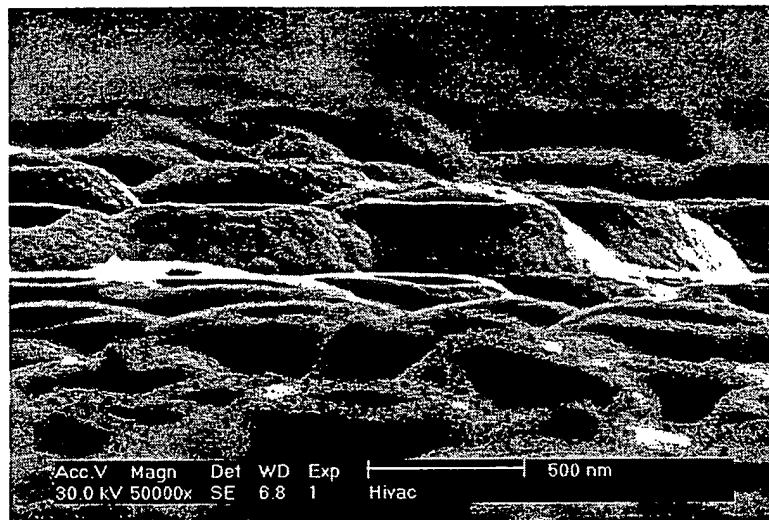


Fig. 19



Alumoxane	polystyrene	flow	flux	permeability	surface area	pore volume
	( $\mu\text{m}$ )	(mL/min)	( $10^{-6}\text{m/s}$ )	( $\text{nm}^2$ )	( $\text{m}^2/\text{g}$ )	(mL/g)
Support	-	0.116	1.40	37.18	3.5	0.02
A-alumoxane	-	0.071	0.85	22.15	111.3	0.32
A-alumoxane	0.75	0.103	1.25	32.21	267.0	0.50
A-alumoxane	3.0	0.106	1.28	32.98	265.1	0.56
A-alumoxane	15	0.095	1.15	29.68	272.1	0.57
A-alumoxane	mixed	0.072	0.87	22.48	285.6	0.42
MEEA-alumoxane	0.75	0.102	1.23	31.77	218.52	0.53
MEEA-alumoxane	3.0	0.159	1.92	49.57	231.75	0.56
MEEA-alumoxane	15	0.159	1.92	49.66	333.50	0.81
MEEA-alumoxane	mixed	0.121	1.46	37.71	202.14	0.29

Fig. 20